Risk factors associated with molar pregnancy

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Abstract

Background: *Gestational Trophoblastic Diseases (GTD) is one of the causes of morbidity and mortality among women in the reproductive age group.*

Methodology: *It was a cross sectional study done in the Obstetrics & Gynaecology department of Shaheed Suhrawardy Medical College & Hospital, Dhaka, between July 2015 to December 2015 to determine the risk factors associated with molar pregnancy. Thirty three consecutive patients who were diagnosed as molar pregnancy were selected as the study population. Diagnosis was done by examination, serum β-hCG assay & ultrasonographic findings. Histopathological examination of uterine contents was done in all the cases. Data was collected by face-to-face interview by using a pre-design questionnaire. Variables like age, parity, socio economic condition, Blood group, Obstetric history & previous history of molar pregnancy. Ultrasonography & Serum β-hCG assay was the main diagnostic tool in this study. Other variables like mode of treatment, complications, follow-up and outcome of the patients were also recorded.*

Majority 16 (48.5%) of the patients were belonged to 21 – 35 years age group with range from 18 to 47 years. Primi gravida were 10 (30.3%), 18 (54.5%) were multigravida and 5 (15.2%) were grand multipara. Most of the (84.8%) patients came from below average income group family and only 5 (15.2%) patients came from average income group family. Regarding the risk factors more than a half 17 (51.5%) of the patients belonged to more than 35 years and under 21 years. Two (6.12%) had previous history of molar pregnancy, 4 (12.1%) had previous history of spontaneous abortion and 3 (9.1%) used long term oral contraceptive. For diagnosis serial serum β-hCG was done in 28 (84.8%) patients. Only suction evacuation was the treatment in 26 patients. Five patients required suction evacuation followed by chemotherapy. Two patients had abdominal hysterectomy due to advanced age. All the patients advised for regular follow up, but 18 (54.5%) patients attended regularly, 11 (33.3%) patients irregular follow up and 4 (12.1%) patients incomplete follow up. Among them 2 (6.1%) required second curettage due to incomplete evacuation, 4 (12.1%) patient required second curettage with chemotherapy. After 3 months 17 patients were free of any sign and symptoms.

Conclusion: *Age >35 years and <21 years were the most common risk factors & most of the patients came from below average income group family. Early diagnosis by USG & early intervention is important for better outcome.*

INTRODUCTION

Molar pregnancy is the most prevalent form of Gestational Trophoblastic Disease (GTD), also known as Hydatidiform mole.[1,2] Gestational Trophoblastic Disease (GTD) includes hydatidiform moles (partial and complete), invasive mole, malignant choriocarcinomas and placental site trophoblastic tumors (PSTT).[3] A hydatidiform mole is an aberrant pregnancy with huge grapelike vesicles filling and distending the uterus without a fetus.[4]

Globally reported rates of molar pregnancy differ. The incidence is intense in developing countries. In developing countries, the incidence is generally accepted to be very high.[5] Countries in Southeast Asia including Bangladesh are relatively prone to the condition. The risk factors for hydatidiform mole are advanced maternal age, teen aged pregnancy, inadequate nutrition, impeded maternal immune mechanisms, low folate and carotene diets, chromosomal abnormality, environmental factors, and a history of

hydatidiform mole, it is higher also in nulliparous women.[6,7] There is insufficient evidence to support the involvement of additional factors such as ethnicity, endogenous estrogen level, ABO blood group.[8]

Early detection of a hydatidiform mole is possible through ultrasonography and periodic monitoring of serum Human Chorionic Gonadotropin (HCG) hormone levels.[9]

With modern medical technology, the condition can be diagnosed early and addressed effectively When the diagnosis has been confirmed, the termination of pregnancy by Suctions Evacuation and curettage is the method of treatment. Post evacuation close follow up with serial serum β-hCG titer is essential for every patient of molar pregnancy. Otherwise, this could put a mother's life in jeopardy if it isn't addressed quickly and correctly. This study was done to determine the risk factors associated with molar pregnancy.

Methodology

A cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Shaheed Suhrawardy Medical College & Hospital, Dhaka from July 2015 to December 2015. A total of 33 patients who were admitted in Obstetric and Gynae department and diagnosed as molar pregnancy (Complete or Partial), Invasive mole, Choriocarcinoma with the aid of clinical presentation, ultrasonographic findings & serum β-hCG assay; were included in the study using consecutive sampling technique. Patients who were not willing to take part in the study were excluded. Following informed about the study aim, objectives and procedure, informed written consent was taken from each participant. Histopathological confirmation of molar pregnancy was done in every patients. Data regarding demographic characteristics, obstetric history & previous history of molar pregnancy, clinical variables, gestational age and clinical presentation at admission was collected by face-to-face interview and clinical examination. Data collection was done using a pretested semi structured questionnaire. All the patients were treated according to established guideline. After suction evacuation and curettage, all the patients had serum βhCG after 48 hours and TVS after one week. Those diagnosed as incomplete evacuation had second curettage. All the patients having confirmed as complete evacuation or uterus is empty – follow up by weekly serum β-hCG started. This was continued upto two negative. Then monthly for 6 months. Due to time constrain of my study period – as it was the dissertation work, my patients were followed upto 3 months. Ethical approval for the study was taken from local ethical committee. Data was gathered and analyzed by SPSS version 21.

Result

A total of 33 patient participated in the study. Data was collected from them during admission, management, follow up and analyzed. The demographic, obstetric characteristics of the participants were presented in Table 1 and it was found that about one third (33.3%) of the patient were of ≤20 years age group and 18.2% were of >35 years age group. The mean ± SD age of the participants was 26.7± 7.2. Majority (54.8%) of the participants came from below average income family.

Greater than half (54.5%) of the participants suffering from molar pregnancy were multiparous, whereas only 5 (15.2%) were grand multiparous. Commonest blood group was A (48.5%).

Table 1. Demographic and obstetrical characteristics of the participants (n=33)

Characteristics	Frequency	Percentage
Age (years)		
≤20	11	33.3
21-35	16	48.5
> 35	6	18.2
Mean ± SD	26.7±7.2	
Socioeconomic status		
Below average income group family	28	84.8
Average income group family	5	15.2
Parity		
Primipara	10	30.3
Multipara	18	54.5
Grand multipara	5	15.2
Blood group		
A	16	48.5
B	7	21.2
O	6	18.2
AB	4	12.1

Table 2. Clinical presentation, risk factors and modality of treatment received by the participants (n=33)

Characteristics	Frequency	Percentage
Presenting symptom (multiple responses)		
Amenorrhea of short duration	24	72.7
Hyperemesis	7	21.2
Pre-eclampsia	3	9.1
Lower abdominal pain	5	15.2
Per vaginal bleeding	25	75.8
Per vaginal expulsion of grape like vesicles	5	15.2
Risk factors		
Age < 21 years	11	33.3

Age >35 years	6	18.2
History of molar pregnancy	2	6.1
History of spontaneous abortion	4	12.1
Long term oral contraceptive use	3	9.1
Treatment		
Only Suction evacuation and curettage	26	78.8
Suction evacuation followed by chemotherapy	5	15.2
Suction evacuation followed by total abdominal hysterectomy	2	6.1

Clinical presentation, risk factors and modality of treatment received by the participants is presented in Table 2. The commonest presenting symptom was per vaginal bleeding [25 (75.8%)] followed by a period of amenorrhea [24 (72.7%)]. More over 15.2% patients presented with per vaginal expulsion of grape like vesicles. Among the patients 12.1%, 9.1% and 6.1% had history of spontaneous abortion, molar pregnancy and long-term use of contraceptive pill, respectively. All the patient were treated by suction evacuation, where only 15.2% and 6.1 % patients were treated with chemotherapy and total abdominal hysterectomy following suction evacuation, respectively. About 34% patient were <21 years of age and 18.2% of the patients were >35 years.

Discussion

This study was carried out with an aim to explore the risk factors associated with molar pregnancy. Maternal reproductive age is the most consistent risk factor for hydatidiform mole in every region and ethnic group.[10] The incidence is higher in women younger than 20 years(teenagers) and older than 40 years of age (40–50 years).[11,12,6,13] In this present study, majority 16 (48.5%) of the patients was within 21 – 35 years age group. 33.3% patient were <21 years of age and 18.2% of the patients were of age >35years. The mean age of the patients was 26.7±7.2 years with range from 18 to 47 years. Our study finding was found similar with Tham et al. (2003), where they mentioned that the mean age of the Asian women with gestational trophoblastic disease was 26.3±6.7 years.[14] According to the findings of Reddy et al. (1994) among the participants of their study suffered from GTD 70% were multipara and 10% were grand multiparous. Another study that was conducted on Gambia from 2026-2018 (A cross sectional descriptive study on hydatidiform mole at Gambian tertiary hospital) also

reported multiparous women predominance.[15] Both of the study coincides with our study finding, here we found that more than half (54.5%) of our study participants were multiparous. In this study majority of the patients were from below average income group which was found similar with another studies conducted in our country by Begum (2012) and Khan, Ferdous and Alam (2010). Shamima et al. (2018) on their study found the prevalent (56.6%) blood group was A which is similar with our study findings. Whereas, Khan, Ferdous and Alam (2010) founded B positive as the predominant blood group among their study participants.[16,17,18] After one molar pregnancy, the risk of second H.Mole in a subsequent pregnancy increases only to ~1–2%.[19] In this study 6.1% patients had history of molar pregnancy. Suction evacuation & curettage is the preferred method of evacuation regardless of uterine size in patients who desire to preserve fertility.[20] Hysterectomy is particularly advisable for patients >40 years whose risk of developing GTN is significantly increased.[21] In this study 78.8% of the patients were treated by suction evacuation & curettage. Suction evacuation followed by chemotherapy 15.2% and Suction evacuation followed by total abdominal hysterectomy (6.1%). Molar pregnancy patients need follow-up to identify persistent mole or malignant GTN who require chemotherapy or surgery at an early stage. Persistent vaginal bleeding and elevation of serum β-hCG levels are the main indicators of residual disease.[21] After initial management only 5 (15.2%) patients had vaginal bleeding, whereas 66.6 % patients had no symptoms. During follow up visits 2 (6.1%) patients required second curettage due to incomplete evacuation of the mole, 4 (12.1%) patients required second curettage with chemotherapy and 2 (6.1%) patients had hysterectomy. The patients were advised for follow up visit. On follow up visit at 3rd month 24.24% patient were lost to follow up and which was also found to be similar with the findings of drop out of follow up by Khan, Ferdous and Alam (2010) and Nahar (2021).[17,4] At the time of final evaluation after 3 months more than half of the patients were free of any sign and symptoms. This study was conducted in the urban tertiary care hospital with shorter duration and small sample size. This study might not reflect the whole country scenario of molar pregnancy. So country wide large scale study is recommended.

Conclusion

Known risk factors like extreme of age (>35 and <21 years), multiparity, low socioeconomic status, previous history of molar pregnancy found common among the study participants. Early diagnosis by USG & early intervention is important for early & complete recovery. For better outcome patients need to be properly counselled for regular follow up.

Reference

1. Wagner, S.A. et al. (2008) 'Metastatic gestational trophoblastic disease following a complete hydatidiform mole coexistent with an anencephalic fetus diagnosed at 10 weeks' gestation', *Journal of Ultrasound in Medicine*, 27(10), pp. 1533–1536.
2. Heller, D.S. (2014) 'Gestational Trophoblastic Disease', in McManus, L.M. and Mitchell, R.N.

(eds) *Pathobiology of Human Disease*. San Diego: Academic Press, pp. 2443–2455. doi:10.1016/B978-0-12-386456-7.05014-0.

3. RCOG (2021) 'Management of Gestational Trophoblastic Disease', *BJOG: An International Journal of Obstetrics &Gynaecology*, 128(3), pp. e1–e27. doi:10.1111/1471-0528.16266.

4. Nahar, S. (2021) 'Molar Pregnancy Analysis of 50 Cases', *Sch Int J ObstetGynec*, 4(6), pp. 278–281.

5. Shazly, S.A.-E.M. *et al.* (2012) 'Twin pregnancy with complete hydatidiform mole and coexisting fetus following ovulation induction with a non-prescribed clomiphene citrate regimen: a case report', *Journal of Medical Case Reports*, 6, p. 95. doi:10.1186/1752-1947-6-95.

6. Aghajanian P. (2007) 'Gestational trophoblastic disease', in Decherney AH et al. (eds) *Current Diagnosis Treatment in Obstetrics and Gynaecology*. 10th ed. New York: Mc Craw Hill Medical Publishing Division, pp. 885–95.

7. Chandra, A. *et al.* (2015) 'Hydatiform mole and its anesthetic implications', *Medical Journal of Dr. DY Patil University*, 8(6), pp. 841–841.

8. Cabill, D.J. and Wardle, P.G. (2006) 'Bleeding and pain in early pregnancy', *High risk pregnancy: management options. 3rd ed, Elsevier Saunders. Philadelphia, US*, pp. 84–104.

9. Mubark, N.N., Jalil, A.T. and Dilfi, S.H. (2020) 'Descriptive Study of Hydatidiform Mole According To Type and Age Among Patients in Wasit Province, Iraq', *Global Journal of Public Health Medicine*, 2(1), pp. 118–124.

10. Parazzini, F. *et al.* (1991) 'Risk factors for gestational trophoblastic disease: a separate analysis of complete and partial hydatidiform moles.', *Obstetrics and gynecology*, 78(6), pp. 1039–1045.

11. Sebire, N.J. *et al.* (2002) 'Risk of partial and complete hydatidiform molar pregnancy in relation to maternal age', *BJOG: an international journal of obstetrics and gynaecology*, 109(1), pp. 99–102. doi:10.1111/j.1471-0528.2002.t01-1-01037.x.

12. Agboola, A. (2006) 'Trophoblastic tumours', *Textbook of Obstetrics and Gynaecology for Medical Students. 2nd ed. Ibadan: Heinemann Educational Books (Nigerian) Plc*, pp. 218–24.

13. Savage, P. (2008) 'Molar pregnancy', *The Obstetrician &Gynaecologist*, 10(1), pp. 3–8.

14. Tham, B.W.L. *et al.* (2003) 'Gestational trophoblastic disease in the Asian population of Northern England and North Wales', *BJOG: An International Journal of Obstetrics &Gynaecology*, 110(6), pp. 555–559.

15. Anyanwu, M. and Bah, K. (2020) 'A cross sectional descriptive study on hydatidiform mole at Gambian tertiary hospital', *MOJ Women's Health*, 9(1), pp. 1–5.

16. Begum, S.N. (2012) 'Choriocarcinoma-Varied Presentations', *Journal of Bangladesh College of Physicians and Surgeons*, 30(3), pp. 145–150.

17. Khan, J.H., Ferdous, J. and Alam, S. (2010) 'Clinical presentation and management of hydatidiform mole in a Peripheral Tertiary Hospital', *Bangladesh Journal of Obstetrics &Gynaecology*, 25(2), pp. 59–64.

18. Shamima, M.N. *et al.* (2018) 'Evaluation of molar pregnancy in Rajshahi Medical College Hospital', *KYAMC Journal*, 9(1), pp. 24–27.

19. Kumari, S. *et al.* (2020) 'Recurrent Molar in Five Consecutive Pregnancies – A Case Report', *International Journal of Women's Health*, 12, pp. 171–174. doi:10.2147/IJWH.S230417.

20. Berkowitz, R.S. and Goldstein, D.P. (1996) 'Chorionic tumors', *The New England Journal of Medicine*, 335(23), pp. 1740–1748. doi:10.1056/NEJM199612053352306.

21. Cavaliere, A. *et al.* (2009) 'Management of molar pregnancy', *Journal of Prenatal Medicine*, 3(1), pp. 15–17.